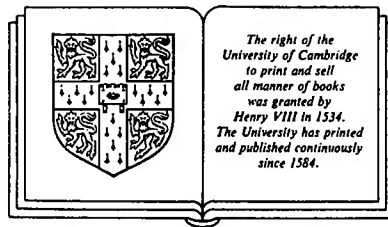


EXHIBIT A

Cambridge Dictionary of Science and Technology

General Editor

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Content

Preface

Subject categories

Contributors

Abbreviations

Greek alphabet

The Dictionary

Appendices

Paper Tables

Chemical Formulas

Chemical Elements

Periodic Table

Animal Kingdom

Plant Kingdom

Geological Time

Physical Constants

SI Conversion

Physical Constants

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l material made of cermet or carbon-

). General term for hich two or more he effect of a single

scene. See back projection, front projection, travelling matte shot etc.

composite resistor (*Elec.Eng.*). One formed of solid rod of carbon compound.

composite structure (*Eng.*). Any structure made by bonding two or more different materials, such as metal, plastic, composite material etc.

composite truss (*Build.*). A roof truss formed of timber struts and steel or wrought-iron ties (apart from the main tie, which is usually of timber to simplify fixings).

composite yarn (*Textiles*). Yarn made from a combination of staple fibres and continuous filaments.

composition (*Chem.*). The nature of the elements present in a substance and the proportions in which they occur.

composition founts (*Print.*). The smaller sizes of type, up to 14-point, as used for bookwork.

composition nails (*Build.*). Roofing nails made of a cast 60-40 copper-zinc alloy.

composition of atmosphere (*Chem.*). Dry atmospheric air contains the following gases in the proportions (by weight) indicated: nitrogen, 75.5; oxygen, 23.14; argon, 1.3; carbon dioxide, 0.05; krypton, 0.028; xenon, 0.005; neon, 0.00086; helium, 0.000056. There are variable trace amounts of other gases incl. hydrogen and ozone. Water content, which varies greatly, is excluded from this analysis.

composition of forces (*Phys.*). The process of finding the resultant of a number of forces, that is a single force which can replace the other forces and produce the same effect. See **parallelogram of forces**.

composition rollers (*Print.*). (1) For letterpress printing, a mixture of glue, glycerine and molasses. (2) For lithographic printing, vegetable oils and rubber, vulcanized.

compositor (*Print.*). A craftsman whose work consists of setting up type matter by hand, or correcting that set by machine. Skill and judgment in display work are part of his routine.

compost (*Bot.*). (1) Rotted plant material and/or animal dung etc. used as a soil conditioner. (2) A medium in which plants (especially plants in pots) are grown, composed of one or more of sand, soil, grit, peat, perlite, vermiculite etc. with lime and fertilizers as necessary.

compound (*Bot.*). Consisting of several parts: a leaf made up of several distinct leaflets; an inflorescence of which the axis is branched etc. Cf. **simple**.

compound (*Chem.*). See **chemical compound**.

compound arch (*Arch.*). An arch having an **archivolt** receding in steps, so as to give the appearance of a succession of receding arches of varying spans and rises.

compound brush (*Elec.Eng.*). A type of brush used for collecting current from the commutator of an electric machine; the brush has alternate layers of copper and carbon so that the conductivity is greater longitudinally (i.e. in the direction of the main current flow) than laterally.

compound catenary construction (*Elec.Eng.*). A construction used for supporting the overhead contact wire of an electric traction system; the contact wire is supported from an auxiliary catenary which, in turn, is supported from a main catenary, all 3 wires lying in the same plane.

compound curve (*Surv.*). A curve composed of two arcs of different radii, having their centres on the same side of the curve, connecting two straights.

compound dredger (*Civ.Eng.*). A type of dredger combining the suction or suction cutter apparatus with a bucket ladder.

compound engine (*Eng.*). A development of the **simple** steam engine, the compound engine has two or more cylinders of different size, allowing the steam to expand over several stages and enabling more work to be done per unit mass of steam and thus give greater efficiency at the cost of increased complexity.

compound eyes (*Zool.*). Paired eyes consisting of many facets or ommatidia, in most adult Arthropoda.

compound fault (*Geol.*). A series of closely spaced parallel or subparallel faults.

compound filled apparatus (*Elec.Eng.*). Electrical apparatus (e.g. bus-bars, potential transformers, switchgear) in which all live parts are enclosed in a metal casing filled with insulating compound.

compound generator (*Elec.Eng.*). See **compound motor**.

compound girder (*Build.*). A rolled-steel joist strengthened by additional plates riveted or welded to the flanges.

compounding (*Eng.*). The principle, or the use of the principle, of expanding steam in two or more stages, either in reciprocating engines or steam-turbines.

compound lever (*Eng.*). A series of levers for obtaining a large mechanical advantage, the short arm of one being connected to the long arm of the next; used in large weighing and testing machines.

compound magnet (*Elec.Eng.*). A permanent magnet made up of several laminations.

compound microscope (*Phys.*). See **microscope**.

compound modulation (*Telecomm.*). Use of an already modulated wave as a further modulation envelope. Also called **double modulation**.

compound motor, generator (*Elec.Eng.*). One which has both series and shunt field windings.

compound nucleus (*Phys.*). In certain nuclear reactions, the bombarding particle forms a highly excited unstable **compound nucleus** with the target nucleus. This compound nucleus decays to complete the reaction.

compound pendulum (*Phys.*). Any body capable of rotation about a fixed horizontal axis and in stable equilibrium under the action of gravity. If the centre of gravity is a distance h from the axis, and k is the **radius of gyration** about the horizontal axis through the centre of gravity, the period of small oscillations is

$$T = 2\pi \sqrt{\frac{h^2 + k^2}{hg}}$$

compound pillar (*Build.*). A pillar formed of a rolled-steel joist or channels strengthened by additional plates riveted or welded to the flanges.

compound press tool (*Eng.*). A press tool which performs two or more operations at the same station at each stroke of the press.

compound reflex (*Zool.*). A combination of several reflexes to form a definite coordination, either simultaneous or successive.

compound slide rest (*Eng.*). Mounted on the upper face of the lathe cross-slide and carrying the tool post. Can be rotated or *set over* for cutting short internal or external tapers.

compound train (*Eng.*). A train of gear-wheels in which intermediate shafts carry both large and small wheels, in order to obtain a large speed ratio in a small space.

compressed air (*Eng.*). Air at higher than atmospheric pressure. It is used (often at about 600 kN/m²) as a transmitter of energy where the use of electricity or an IC engine would be hazardous (e.g. in mining). The exhaust air may be used for cooling or ventilation.

compressed-air capacitor (*Elec.Eng.*). An electric capacitor in which air at several atmospheres' pressure is used as the dielectric, on account of its high dielectric strength at these pressures.

compressed-air disease (*Med.*). See **caisson disease**.

compressed-air inspirator (*Eng.*). Injector used with pressure-air burners, by which a stream of compressed air is directed through a venturi throat to inspire additional combustion air.

compressed-air lamp (*Min.Ext.*). An electric lamp for use in fiery mines; it is supplied from a small compressed-air-driven generator incorporated in the lamp-holder.

compressed-air tools (*Eng.*). See **pneumatic tools**.

compressed-air wind tunnel (*Aero.*). See **variable-density wind tunnel**.

compressibility (*Phys.*). The reciprocal of the bulk modulus. See also **coefficient of compressibility**.

compressibility (*Powder Tech.*). The property of a powder by which it accepts reduction in volume by pressure. It is measured as the ratio of the volume of loose powder to the volume of the compact, and is related